

WHAT IS CLAIMED IS:

1. A coating film layer moisture adjusting device, for adjusting, to a target moisture content, a moisture content of the coating film layer formed by applying a coating solution to an elongated band-shaped support, which support web is continuously conveyed, the device comprising:

a humidity conditioning zone for having a protective sheet material, which is formed in an elongated sheet-shape and is to be adhered to a surface of the coating film layer formed on the support, pass therethrough;

humidity conditioning means for adjusting humidity in the humidity conditioning zone;

adhering means, which is disposed at a downstream side of the humidity conditioning zone and is for continuously adhering the protective sheet material to the surface of the coating film layer;

moisture content measuring means which is disposed at an upstream side of the adhering means in a conveyance route of the support web and is for measuring a moisture content of the coating film layer; and

humidity conditioning control means for controlling the humidity conditioning means so that the humidity in the humidity conditioning zone becomes a target humidity

corresponding to the measured moisture content of the coating film measured by the moisture content measuring means and the target moisture content, and adjusting the moisture content of the protective sheet material, which has passed through the humidity conditioning zone, to an adjusted moisture content corresponding to the measured moisture content and the target moisture content.

2. A moisture adjusting device according to claim 1, further comprising a preliminary adjusting device which is provided at an upstream side of the moisture content measuring means in the conveyance route of the support web, and is for preliminarily adjusting the moisture content of the coating film layer to the target moisture content.

3. A moisture adjusting device according to claim 2, wherein the preliminary adjusting device comprises:

preliminary moisture content measuring means for measuring the moisture content of the coating film layer;
and

control means for performing feedback control based on the measured moisture content of the coating film layer measured by the secondary moisture content measuring means, so as to make the moisture content of the coating film layer approximate the target moisture content.

4. A moisture adjusting device according to claim 1, further comprising: third moisture content measuring means, which is disposed at the downstream side of the humidity conditioning zone and the upstream side of the adhering means and is for measuring the moisture content of the protective sheet material.

5. A moisture adjusting device according to claim 4, wherein the humidity conditioning control means is for performing feedback control for the humidity conditioning means based on the measured moisture content of the protective sheet material measured by the third moisture content measuring means, so as to make the moisture content of the protective sheet material, which has passed through the humidity conditioning zone, further approximate the adjusted moisture content.

6. A moisture adjusting device according to claim 1, further comprising pass length adjusting means for one of increasing or decreasing a pass length of the protective sheet material within the humidity conditioning zone in accordance with at least one of a conveyance speed of the protective sheet material or the adjusted moisture content.

7. A moisture adjusting device according to claim 6, wherein the pass length adjusting means is for adjusting the pass length so that the moisture content of the protective sheet material, which has passed through the humidity conditioning zone, further approximates the adjusted moisture content.

8. A moisture adjusting device according to claim 6, wherein the pass length adjusting means is for adjusting the pass length so that a passing time required for the protective sheet material to pass through the humidity conditioning zone becomes substantially constant regardless of the conveyance speed of the protective sheet material.

9. A planographic printing plate producing method, comprising the steps of:

forming an overcoat layer on a surface of at least one of a photosensitive layer or a heat-sensitive layer after forming the at least one of the photosensitive layer or the heat-sensitive layer on a support; and

adhering a protective sheet material, a moisture content thereof having been adjusted by the moisture adjusting device of claim 1, to the surface of the overcoat layer.

10. A planographic printing plate producing method,
comprising the steps of:

(a) forming a coating film layer on a support;

(b) setting a target moisture content as a weight ratio of moisture, which should be contained in the coating film layer;

(c) measuring a moisture content of the coating film layer;

(d) making a protective sheet material, which is formed in an elongated sheet-shape and is to be adhered to the surface of the coating film layer formed on the support, pass through a humidity conditioning zone;

(e) adjusting a humidity within the humidity conditioning zone to a target humidity corresponding to the measured moisture content of the coating film measured in the moisture content measuring step (c) and the target moisture content, so as to adjust the moisture content of the protective sheet material, which has passed through the humidity conditioning zone, to an adjusted moisture content corresponding to the measured moisture and the target moisture content; and

(f) adhering continuously the protective sheet material, the moisture content of which was adjusted to the adjusted moisture content in the adjusting step (e), to the surface of the coating film layer.

11. A planographic printing plate producing method according to claim 10, wherein the adjusting step (e) comprises the step of:

(e-1) when the measured moisture content of the coating film layer is approximately the same as the target moisture content, setting the adjusted moisture content of the protective sheet material to a value, which is approximately the same as the target moisture content, and controlling the humidity and a temperature within the humidity conditioning zone so that the protective sheet material attains the adjusted moisture content in the humidity conditioning zone.

12. A planographic printing plate producing method according to claim 10, wherein the adjusting step (e) comprises the step of:

(e-2) when the measured moisture content of the coating film layer is lower than the target moisture content, setting the adjusted moisture content of the protective sheet material to be higher than the measured moisture content in accordance with a deviation between the measured moisture content and the target moisture content, and controlling the humidity and temperature within the humidity conditioning zone so that the protective sheet

material attains the adjusted moisture content in the humidity conditioning zone.

13. A planographic printing plate producing method according to claim 10, wherein the adjusting step (e) comprises the step of:

(e-3) when the measured moisture content of the coating film layer is higher than the target moisture content, setting the adjusted moisture content of the protective sheet material to be lower than the measured moisture content in accordance with a deviation between the measured moisture content and the target moisture content, and controlling the humidity and the temperature within the humidity conditioning zone so that the protective sheet material attains the adjusted moisture content in the humidity conditioning zone.

14. A planographic printing plate producing method according to claim 10, further comprising, between the setting step (b) and the measuring step (c), a preliminary adjusting step (g) for making the moisture content of the coating film layer approximate the target moisture content.

15. A planographic printing plate producing method according to claim 14, wherein the preliminary adjusting step (g) comprises the step of measuring the moisture content of the coating film layer and performing feedback control in accordance with the measured moisture content, so as to make the moisture content of the coating film layer approximate the target moisture content.

16. A planographic printing plate producing method according to claim 10, wherein the adjusting step (e) further comprises the step of measuring, before the adhering step (f), the moisture content of the protective sheet material which has been output from the humidity conditioning zone and performing feedback control in accordance with the measured moisture content, so as to make the moisture content of the protective sheet material, which has passed through the humidity conditioning zone, further approximate the adjusted moisture content.

17. A planographic printing plate producing method according to claim 10, further comprising a pass length adjusting step (h) for one of increasing or decreasing the pass length of the protective sheet material in the humidity conditioning zone in accordance with at least one

of a conveyance speed of the protective sheet material or the adjusted moisture content.

18. A planographic printing plate producing method according to claim 17, wherein the pass length adjusting step (h) comprises the step of adjusting the pass length so that the moisture content of the protective sheet, which has passed through the humidity conditioning zone, further approximates the adjusted moisture content.

19. A planographic printing plate producing method according to claim 17, wherein the pass length adjusting step (h) comprises the step of adjusting the pass length so that a passing time required for the protective sheet material to pass through the humidity conditioning zone is substantially constant regardless of the conveyance speed for the protective sheet material.